continued from tenth page

size it was hardly greater than the Half shoreline on both rivers, the most impor-The need of great carrying power, tant of late years being the Chelsea docks. of faster service and economy of handling.

Beginning of Steam Navigation.

to the propulsion of ships having been acby Fulton, to New York also tell the honor of building the first vessel to steam across the ocean. This, the Sasansah, was built here by Francis Fickett, Daniel Dodd. Under the com-Captain Moses Rogers, she steamed that same year from her name port to Liverpool, thence to Stockholm and St. Petersturg, afterward visiting Constanti- lines. in every port meeting the en-

The Sirius, a smaller steamer, which had been her avant-courier, reached at the end of the first ten years. April 22, having sailed from Cork The following day all New

the minds of timid passengers and of the port.

to the Island of Manhattan Nesmiths and other oldtime Brooklyn and not been disposed of already" Long Island families.

The Bronx there are 105.60 miles of making the total waterfront of the greater city 444.50 miles, of which 315 miles

epresents a minimum value of \$190,000,000 The value of unimproved city holdings added, which would make his guess not

illes of wharfage room. The coastwise ont, which gives them \$16 miles of farce "A Trip to Chinatown" was played at

Railroads, including railroad ferries, ocupy 3.56 miles, or about eighteen miles of wharfage; 8.77 miles of waterfront, giving 23.59 miles of wharfage room, is used for general and miscellaneous wharfage. Improvements have been made from

time to time throughout this Manhattan

Preliminary work for the Chelsea Imad to the perfection of the "New York provement, dredging, began in 1900. Less which were regarded by Amer- this cost and the value of the real estate. sackers if not by all the world, as the noblest the expense to the city was \$7,587,000. There gaing it may be seen that ever floated in the mer- are eight piers extending into the Hudson carrying trade, for it was in the year unrivalled standard of excellence. The Inland Sea. It is more truly a natbetween Bloomfield and 22d streets. Four are \$25 feet long and four are \$00 feet long, the limits imposed by the War Department. The first successful application of steam The piers vary in width from 125 feet in the case of five piers to 100 feet in the case of two, while the last and narrowest measures only 80 feet. The entire property was un- discovered in California. From that

der lease before completion. The Cunard Line has Piers 54 and 56. The French Line has Pier 57.

Atlantic Transport, American and Wilson

Below these piers are the docks of the

those of the Sound steamers. In the earlier period of waterfront develton of steam vessels were, however, al opment it was the custom to let city land most wholly British. In 1838 the British to various transportation companies on Great Western, forerunner of the thirty-year leases. This system of tenure great fleets which now move in continual proved unfair, however, owing to rapid 1867, and, significantly enough, on the rea" and "Siberia," sister ships of tween this port and the Old changes in values, and the policy of late first day of January, that the Trans- 18,000 tons, followed two years later ed through the Narrows for the years has been to grant twenty-year leases

The Brooklyn Shoreline.

In Brooklyn the city controls the water-Western, the largest vessel affoat propelled front between 28th and 35th streets, where she had sailed from Bristol on April 8, continuing to 58th street. The city also since grown steadily in importance, days, and that despite the disadvantage of to 61st street. The first step toward the improvement of these tracts was made in feet long 58 feet wide over the paddle- fording means of communication with the sail every few days apart.

stead of resorting to Virginia or the city for the accommodation of the Springs, and steamers will con- Brooklyn, Manhattan and Staten Island a voyage over, and not upon, the ever important to the comfort and con-Then they may soar tained for the use of city departments.

portant being those of Brooklyn. The en- order, for the transit of the Pacific de- are situated. The next port of call is Flood Building, San Francisco. tire strip of waterfront in Brooklyn between Catharine Ferry and the Eric Basin Not until 1850 did the city awake to the is controlled by the New York Dock Comof controlling its waterfront, if pany, successors to the Brooklyn Wharf cial supremacy was to be re- and Warehouse Company, which had long In that year and in 1871 the state before acquired the property from the cave to the city all the land under water Martins, Pierreponts, Lows, Woodruffs,

course with regard to land under \$17,000,000, has made a number of improvewater along the shores of the Bronx, and ments in the last few years. Only the Fulconsolidation which ton and Wall street ferry docks break the sions have been sought for all thirty of which, either in part or as a development, for practi- warehouses. Thousands of tons of sugar he whole shore of Manhattan avail- are stored here, after the capacity of the wharfage is now under municipal refineries for storage purposes has been t, there are 39.90 miles exhausted. Coffee, wool and hair, too, of waterfront in Manhattan, of which the are stored here in large quantities. A priin private hands, of which, however, this system, which is provided with its own the great packet lines had their beginnings. fleet of barges and tugs.

been a factor in the development of the nearby New Jersey shore. Perishable im-

as imports and exports are concerned, are The transatlantic steamships occupy a the great docks of the North German ength of 1.27 miles on the Manhattan Lloyd and the Hamburg-American lines.

amships occupy 1.38 miles of water- appeared on the sidewalk when the Hoyt

SPECIAL ANNOUNCEMENTS.

SPECIAL ANNOUNCEMENTS.

SPECIAL ANNOUNCEMENTS.

Pacific Mail Steamship

fornia," arrived in the Bay of San Francisco from Panama, carrying seekers after gold, which had but recently been year until the present time the company has maintained a large fleet of Piers 58, 59, 60, 61 and 62 were leased to steamers, gradually developing from the International, including the White Star, the old type of wooden, sidewheel steamers to the present up-to-date, fast, ocean-going steel vessel, with her twin welcome so great a novelty de- Hudson River lines, and on the East River screws, magnificent accommodations, safety of passengers and the efficient preme. handling of large cargoes. It was in Pacific Line was established with the by the "Mongolia" and "Manchuria," sailing of the steamer "Colorado," and sister ships of 27,000 tons. These four small and insignificant compared with "China," of 10,000 tons, and the "Perthe Panama Line, it was not long be- sia," of 9,000 tons, comprise the presthe property of the Bush Terminal begins, fore it outstripped the latter, and has ent Trans-Pacific fleet.

ber of days be spent on shipboard than owing to the extreme dryness of the does that of the Atlantic. The cele- the air and its central location. From The Pacific Mail Steamship Company brated caterer, Mr. V. Moroni, has Kobe to Nagasaki, the next stop, the is the pioneer line in the Pacific Ocean brought the cuisine of the ships to an steamer route is through the famous 1848 that the first steamer, the "Cali- ships are, therefore, designed for the ural canal than a sea, and the sceservice for which they are intended, nery throughout its entire length is Structurally able to cope with the buf- surpassingly beautiful and arouses enfetings of the North Atlantic, their ap- thusiasm and comparison with that When the imposing shaft erected in name was taken), is found in considerpointments are such as to provide the of Switzerland and the reaches of the the nation's capital in memory of the able abundance in aeveral of the states greatest amount of comfort in the long Rhine. Nagasaki is the last port of republic's first President was finished, in of the United States, the most impor-

from the builders' hands and worthy to the Yangtse River, from which point uphold in these days of modern steam travellers are conveyed by swift "Silver from clay," it had been called, the surplus moisture driven off, and is tablished in those days of sailing ves- about fourteen miles. Shanghai is the ver, some \$16 a pound.

The company brought out the "Kowhile that line was for a long time fine ships, with the ever popular

has completing her journey in fifteen controls the stretch of land from 58th street until to-day it maintains a fleet of the Southern Pacific route, or "Sunsteamers which vie with the best ves- shine Belt," aside from the unusual She registered 1,604 tons, was 234 the purchase of the 39th street ferry, af- sels in the Atlantic Ocean, and which freedom from storm, ice and fog, is the The Pacific Mail Steamship Company monotony of the long voyage to the Steamship Company maintains two sernot even the Great Eastern, lyn, each a quarter of a mile long—that is not even with material to say with for a substantially nothing more with soda a compound called sodium is, therefore, at once the oldest and the Far East, by a stop at Honolulu, in the sale of about a dozen vestion of the sale of about a dozen vestion of the sale of a soluble in the sale of a stop of the sale of a sale of a sale of the sale mished Jules Verne with material to say, with four times the capacity of the newest of the corporations established Hawaiian Islands. Six days is the for a book, created so much of a sensation.

In this business—oldest in point of average run from the Golden Gate to
pense of £2,000,000. Increased feelitties for
interborous travaling every
tions of the genial gossips of the day was
in this business—oldest in point of average run from the Golden Gate to
pense of £2,000,000. Increased feelitties for
interborous travaling every
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in this business—oldest the days for ports of Mexico, Guatepense of £2,400
years and reight steamers, sailing every
the days for ports of Mexico, Guatepense of £2,400
years and newest in point of modernity
years and newest of the days for ports It would, of course, be no exaggeration probable that no steamship company in course is westward through the Ha- South America, and the other an exvisit the shores of to say that the docks built and owned by the world has such a large percentage waiian Archipelago. Twelve hundred press freight service, steamers sailing to Virginia or the city for the accommodation of the of its tonnage in new ships, four of the miles west of Kauai, the last of the semi-monthly direct from San Franthe fashion until some more municipal ferries are the finest of their six comprising the Trans-Pacific fleet group, the steamer passes the longitute that clay and many rocks of similar for- composed, the alumina being thrown out the Pan ma Rai oad and on the other that clay and many rocks of similar forof the go-ahead tribe class, surpassing even the handsome struct- having been less than nine years from dinal degree of 180, which has been es- side of the Ischmus with steamers for mation depended on some metal as their of solution as a hydrate and carefully ecticability of bal- ures used by the railroads on the Hudson their builders' yards, and they are the tablished as the international date line, New York. By this service freight can base. This suggestion bore slow fruit, washed to free it from soda salts. This and here a day is lost: If, for instance, be shipped from San Francisco and de- though worked on by many brilliant in- hydrate is then thoroughly dried, and is ever important to the comfort and conthereby escaping the rocks growth of the outlying boroughs, these are cific routes require that every traveller becomes Thursday immediately upon als and headlands which continue not directly concerned with the commerce shall find himself made happy in his crossing. Ten days after leaving Hono- Europe, all over the United States, in possession of plenty of room, luxurious lulu the ship enters the Bay of Yeddo, Hono Shorefront properties in private hands surroundings, an unusual amount of on which both Yokohama, the foreign being at 120 Broadway, New York, and after many years of experiment by described, the product of these works may next be considered, the most im- ventilation and a cuisine of the highest city, and Tokio, the car tal of Japan, its general and operating offices at 384 thereafter first succeeded, in 1845, in ob- being metallic aluminum obtained from

voyage of the placid Southern Pacific. call in Japan, whence the steamer 1884, there was placed on the topmost tant deposits being in Alabama, Georgia, It was but a few years ago that they makes her way to China, dropping pinnacle of the monument a capping of Tennessee and Arkansas. The deposits took their places in the service, fresh anchor at Woosung, at the mouth of storm defeing undirected untarriched and arkansas. The deposits

> when a steamer, instead of going to price of 25 cents a pound. Shanghai, proceeds from Nagasaki diwhich is full of pleasant experiences.

The company maintains offices in

SPECIAL ANNOUNCEMENTS. ALUMINUM

THE IMMUTABLE METAL AND ITS MULTITU-DINOUS USES.

HOW A GREAT INDUSTRY HAS GROWN FROM A SMALL BEGIN-

navigation the traditions that were es- launches to Shanghai, a distance of and its cost was about the same as sil- shipped to the ore refining plant at East

Peking, the capital of China. From university town-Oberlin-was bringing known, with the ores of most other Shanghai the voyage is to the British to a successful conclusion his discovery metals it is simply necessary to concencolony of Hongkong, the terminus of of a cheap method of aluminum manu- trate and separate the true ores from the line, and one of the most interesting places in the world. Canton and day aluminum of greater purity than uent parts, the resultant ores being then Macau are within easy distance. This that used on the Washington Monument smelted and the impurities worked out route is varied about once monthly, is available in unlimited quantities at a by various methods of refining. Bauxite,

to accomplish which about twenty- and is therefore inexhaustible in quan- such as iron oxide, silica, titanic acid

vestigators, such as Hare, Silliman, a pure white powder not unlike fine Oersted and Bersilius, for it was not un- sand. This powder is shipped to the Japan, China, Mexico and erick Woehler first isolated aluminum Falls and Massena, where it is subjected entral America, its executive offices and obtained it in the form of a powder, to the Hall process of reduction previous taining it in small metallic globules, be- the electrolytic baths in the form of pig. coming thereby the actual discoverer of After melting this pig and recasting the

Woehler's methods, obtained aluminum in the form of ingot for fabrication by in an almost pure state and determined other metal working concerns, though a

the form of bars was used by him in a electrical cables, and a very large medal of aluminum presented by him to amount is supplied to the great sheet his patron, Napoleon III, who had sup- mills operated by the company at New plied the funds necessary for the costly Kensington and Niagara Falls, where, ery device known to the shipbuilder's art for a baby rattle for the infant Prince Imroughing and finishing rolls, the alumied of the new liners guarantees quick transit
tween the two ports.

The only thing is which no improvement to from aluminum at that time were placed. ment is from aluminum at that time were placed sheets and plates of various gauges,

Deville extracted in 1856-'57 perhaps a into sheets of .0007 inch. It can be total of fifty or sixty pounds of metal beaten into leaf equal to the best leaf produced by costly chemical methods; manufactured in the world. its manufacture then and for a decade of table may be maintained.

All the steamships of the Savannah Line are thereafter could be deemed little more has been not only a ploneer in new enabling homes or than a laboratory experiment. In 1867 fields, it is the virtual creator of the form of sheets, wire, foil or finished will stand in industrial history as a goods, polished, engraved and soldered; classic case of a supply creating a use we get a view of the many difficulties and demand-an exception to the usual that had to be overcome in producing it rule of economics. on the modest scale then in operation: The radical reduction in price brought in purifying and moulding it. After a about by the Hall process and by the lapse of another decade we see again it cheap water power at Niagara, as well the Paris Exposition in 1878 the matur- as through the vastly enlarged producity of the industry, so far as it relates to tion of metal, enabled aluminum to bethe production of the metal by chemical come a competitor of other and more methods, with a prevailing price of \$12 common metals, and the one time "silver mit any general use of the new and promising metal. This condition existed for another decade, with a gradual cheapening of price due to improved and cheapened sodium production, but it was only through the radical invention of the student Charles M. Hall that aluminum could be produced at a price which would allow its wide and general use in commerce, and a new era in metallurgical industry began when, in 1889, the Pittsburgh Reduction Company was organized and began in a small way to manufacture aluminum by steam generaled electric power in Pittsburgh under the

> The Hall process was one through which aluminum was directly reduced from its oxide by electrical means, which furnace and the electrolytic bath. The process utilizes refined aluminum oxide obtained from bauxite, in which the alumina is dissolved by the mingling therewith of the stable solvent cryolite, the aluminum so dissolved being electrolyzed out of its bath, leaving the solvent to the swift moving aeroplane (at 25

> portant one. It was more than a de- century! cided step forward in the art-it was a revolution in the art. It reduced at one decades clearly indicate its more imstep the price from \$8 a pound to 65 portant mission in the world of comwhich a new and great industry was to recent uses but foreshadow its coming be based.

> ward step by locating a reduction plant per trade in the manufacture of sulphide in Niagara Falis as the first important pulp; in the production of ammonia user of electric power generated by the from by-product coke ovens as a connewly constructed cataract plant at that denser material; in the brewery business, point, and from the small beginnings of as containing vats of enormous size; in 1889, when three men were employed in condenser tubes, where other metals are Pittsburgh, with a daily production of rapidly corroded and attacked by liquors fifty pounds, there has grown in the last or fumes; as a container for the raptwo decades a business of splendid pro- idly advancing and highly important inportions, employing some five thousand, dustry of nitric acid fixation from the with a yearly output of many millions of atmosphere; as material for the es-

> pany became the Aluminum Company of developed aeroplane and dirigible bal-America, a new same more indicative loon. and one at Massena, N. Y., where metal enormous demand thereby created for and Niagara Falls, and wire drawing, copper and zinc and other metals ex-

and other features for the comfort and sels when the Yankee clipper was suand a new industry was to be born. To- on the different densities of the constitrect to Manila, in the Philippine Isl- Although iron is the most common of metallic aluminum, and the concentraands, from there steaming to Heng our metals, aluminum is even more tion employed necessarily consists in The distance from San Fran- abundant in nature, for it constitutes separating this oxide from its accomcisco to Hong Kong is some 7,500 miles, about 8 per cent of the earth's crust, panying clay and metallic impurities, seven days are required, every one of tity. Aluminum is the basic metal of etc., and the process employed at East On its Panama Line the Pacific Mail ger and freight steamers, sailing every turquoise, the topaz, the garnet and the while the impurities above named are pressure, is then separated from its im-It was not until 1898 that Sir Hum- purities by filtration and by washing the cisco to Ancon, connecting there with phrey Davy suggested the hypothesis residue with hot water, and is then de-

> metal in a more convenient form of It was not until 1854 that the French ingot, aluminum is ready for the market. chemist Deville, by improvements in Much of the company's product is sold substantial portion goes to the rod and The first metal obtained by Deville in wire mill at Massena for the making of experiments, and in the manufacture of after a long course through a series of on the market at a price of \$90 a pound. lengths and widths. It can be rolled

> > The Aluminum Company of America

from clay" has had its field of usefulness so broadened that it now enters largely into the everyday life of the people in thousands of diversified ways and has won for itself a distinctive place in the metallurgy of the world.

The nation's meals are best cooked in aluminum utensils: it materially aids in making the best steel; it makes engine bases, bodies and other automobile parts; airships employ it in many ways; and used: it is rapidly supplanting brass zinc and other metals in surprising and manifold ways. It serves as a conductor of electrical energy and transmits over thousands of miles of glistening cables the power of falling water to hundreds of cities throughout the broad combine the principles of the electric republic. It was carried by Peary to the North Pole and by Shackleton to "farthest south"!

What may be said of the future of this young giant of the metal world? It is a far cry from the aluminum tipped Washington Monument (at \$16 a pound) cents a pound), yet that change has been wrought within a quarter of a The gigantic strides of the past two

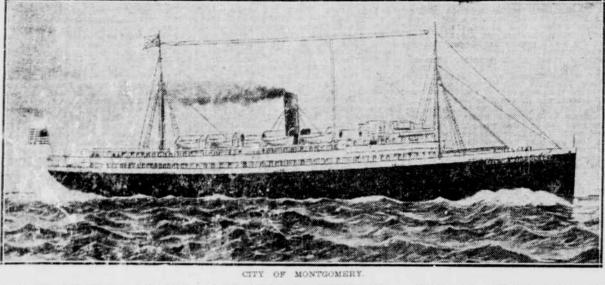
cents a pound. It laid the foundation on merce as the years roll on, and some supremacy. Among these are the grow-In 1893 the industry took another for- ing importance of aluminum to the pasentially lightweight gas engines for In 1908 the Pittsburgh Reduction Com- motor boats, automobiles and the newly

of its business, and this company is at When we consider the coming and inthe present time operating bauxite evitable electrification of steam trunk mines in Arkansas and Georgia, a large line systems and the harnessing of the ore refining plant in East St. Louis, thirty million or more of horsepower in three reduction plants in Niagara Falls our present dormant streams and the is reduced from its exide, together with conductor material; when it is realized rolling mills at New Kensington, Penn., that when our iron ore is all gone, our cabling and insulating mills at Massena, hausted, the final dependence of the Its product embraces pure metal in in- world for metal must be aluminum; it

OCEAN STEAMSHIP COMPANY

Refrigerating Company, which also has what is regarded as the largest plant in the world for the cold storage of furs, arranged to maintain a temperature of 16 degrees below zero. Other great factors in the reception and distribution of merchandise are the Campbell Stores, the Hamburg Stores and the Jersey City Stores.

Refrigerating Company, which also has the savannah Line had its beginning in the Savan



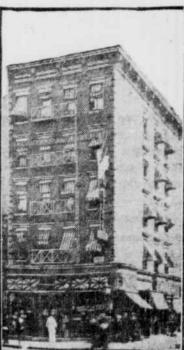
Centennial Hotel

TELEPHONE 1865 MADISON SQUARE—CAFE MADISON SQUARE—HOTEL OFFICE

Hotel Belmore

... and Cafe ...

Northeast Corner 25th St. and Lexington Ave.



Cafe and Restaurant

JOHN E. DALY, · Proprietor.

850 EIGHTH AVENUE, N. E. Cor. 51st St. **NEW YORK**

ing ships:

Gress tons.
City of Savannah.
Gress tons.
City of Atlanta
5.900
City of Macon
5.250
City of Macon
5.250